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Spin kinetics of 3He in contact with synthesized PrF 3 nanoparticles

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Abstract

Two nanosized PrF 3 samples were synthesized using two different procedures. The X-ray and HRTEM experiments showed high crystallinity of synthesized samples. Comparison of enhanced 141Pr NMR spectra of microsized (45 μm) and nanosized PrF 3 powder is presented. Experimental data on spin kinetics of 3He in contact with PrF 3 nanoparticles at T=1.5 K are reported. © 2010 Springer Science+Business Media, LLC.

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Keywords

3He, Cross-relaxation, He-3, Helium, Low temperature, Magnetic coupling, Magnetic relaxation, Nanoparticles, NMR, Nuclear magnetic resonance, Surface, Surface effect, van Vleck